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ABSTRACT

Researchers are concluding that high school and college students do not have a well-balanced repertoire of effective independent learning strategies. Another line of research has focused upon the question of the "process" or the "how" underlying such learning strategies. Three insights from this research are pertinent to developmental educators. First, there is no superior learning strategy. So long as a study strategy requires the student to attend, interact, reconstruct, and elaborate upon the underlying meaning of the text, subsequent learning is generally enhanced. Second, studying is an interactive process. Students cannot be taught to study "in general" or from a general context. If they are to become successful independent learners, they must be taught how to analyze the variables that interact to affect their performances, including (1) task characteristics, (2) text characteristics, (3) learner characteristics, and (4) learner processes and strategies. Third, students cannot control or regulate the strategies. Studies suggest that no one has ever explained to students during the instructional process the real significance of the targeted strategy, or informed them about the "when," "where," and "how" in implementing each strategy. The teacher's task then is to provide not only the opportunity for students to work independently, but also to provide sufficient guidance, input, and feedback by which to develop self-regulatory ability to accompany their efforts. (HTH)

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Recent Research
on Independent Learning Strategies:
Implications for Developmental Education

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Recent research on independent learning strategies: Implications for developmental education

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A considerable amount of recent research has focused upon how students learn how to learn (Alvermann & Ratekin, 1982; Armbruster & Anderson, 1981; Brown, Campione, & Day, 1981; Brown, Bransford, Ferrera, & Campione, 1982; Garner, 1982; Hare, 1981; Tierney, LaZansky, & Schallert, 1982). A smaller portion of this research has refined and reiterated what professionals in developmental education have already known. To be more specific, researchers are concluding that high school and college students do not have a well-balanced repertoire of effective independent learning strategies. Tierney, LaZansky, and Schallert's (1982) study of 623 tenth grade students in Texas and Illinois found that they utilized a very restricted range of study strategies. Most of these subjects rarely implemented strategies when reading textual information, but instead chose to memorize portions of chapters and complete teacher prepared questions and activities as their sole method of study. A study of 395 first semester freshmen at the University of Northern Iowa substantiated Tierney's et al. study (Simpson, Note 1). These college freshmen still utilized restricted or ineffectual strategies and believed in them tenaciously. Researchers have also pointed out that many students can be reluctant and even resistant to exchanging their attractive intermediate strategies for more robust and mature study strategies (Bartlett, 1958; Brown et al., 1982).

While many developmental educators are not particularly surprised at these research findings, there is another line of research studies that could provide for them some significant insights in how to more effectively teach independent learning strategies. Instead of searching for the one "best way" to teach students, this latest research has focused upon the more important question of the underlying "process" or the "how." In this article three of these research insights pertinent to developmental educators will be discussed. Then the practical implications of each insight will be examined.

There Is No Superior Strategy

Many individuals intuitively believe that there is a "superior way" to study or learn. Such a belief can be easily verified in the countless professional textbooks and journals, student workbooks, and packaged programs available on the market today. Research, however, has failed to confirm the superiority of any of these strategies or even to find any one strategy more productive than another (Armbruster & Anderson, 1981). While there is no one superior method of study, there is one research-verifiable question that, if answered, seems to make a strategy more successful for a learner. That question is this: Will the strategy ask the student to become actively involved with the material? When a study strategy requires the student to attend, interact, reconstruct and elaborate upon the underlying meaning of the text, subsequent learning is generally enhanced. (Anderson, 1970, 1972; Craik & Lockhart, 1972)

There have been several notetaking studies which have asked students to become more actively involved in reconstructing information from a text (Bretzing & Kulhavy, 1979; Orlando, 1980; Shimmerlik

& Nolan, 1976). In these studies the students who either paraphrased notes on the information or took notes with their own organizational pattern performed significantly better than the other students who were passively involved with the text. It would seem, then, that it is not whether a student underlines, outlines, or takes notes that really affects learning, but what really matters is the process that the student utilizes with these strategies.

Such an insight should provide considerable assistance to an individual working with a student who claims he/she is having difficulty remembering and understanding textual material. Instead of trying to foist upon the student a new and unfamiliar strategy, the developmental educator could help the student to utilize the present strategy in a more active manner. An example might illustrate this situation.

A college junior made an appointment with the author to discuss her difficulties in understanding a sociology textbook. As we talked and examined the textbook, it became immediately apparent that she was utilizing highlighting as a study strategy. These attempts at highlighting, however, were not involving her in the processing of the textbook's key concepts. In short, she was only passively involved in her reading. To remedy the situation the author suggested that she adapt and modify her present strategy of highlighting by utilizing the following steps:

1. After reading several paragraphs, stop to reflect upon what you read.
2. Selectively underline or highlight key words.
3. When appropriate, enter these symbols/words in the textbook's margin: def.--for a good definition of a key concept; ex.--for a good example; and **--for a good summary.
4. After you have finished a section, stop again and write a one-sentence summary (in your own words) of what you read in the textbook's margin.

These adaptations encouraged her to become more actively involved with the sociology textbook, yet were not too superficially divergent from her present way of studying. Because the modifications seemed minor to her, she chose to maintain them for the entire semester and reported complete satisfaction with the "new" strategy for textbook reading.

Thus, it is important for developmental educators to remember that there is no one best study strategy that must be taught to all students. What should be stressed with students in classrooms and in one-on-one contexts is the need for active involvement and processing of concepts. Regardless of the particular strategy, if the student is attending, reconstructing, and elaborating, independent learning will be enhanced.

Studying Is An Interactive Process

Another common misconception about studying (Armbruster & Anderson, 1981) is that there is a general body of knowledge that should be transmitted to students who want to improve their independent learning strategies. The reality is that students cannot be taught to study "in general" or from a general context. If students are to become successful independent learners, they must be taught how to analyze the variables that interact to affect their performances. (Brown, 1981, 1982) Those

four factors are: (a) the characteristics of the task; (b) the characteristics of the text; (c) the characteristics of the learner; and (d) the learner's processes and strategies. (Bransford, 1979; Brown et al., 1981; Jenkins, 1979)

1. *Task characteristics.* Successful learners structure and adapt their reading strategies to what they already know about the task. The more specifically a student can characterize and define a task, the more successful his/her learning will be.
2. *Text characteristics.* Successful learners analyze the text they are to read because they realize that each content area, each author, and each textbook format places differential responsibilities upon the reader. They know how to fully utilize summaries, boldface headings and italicized words, relationship signals, and statements emphasizing particular ideas as important. They also are sensitive to the typical patterns of development, such as cause-effect, comparison-contrast, definition, and generalization-example.
3. *Learner characteristics.* Successful learners have a self-awareness of their own cognitive resources, strengths, and weaknesses. They can draw upon their prior experiences and existing schemata to make unfamiliar textual material more meaningful. Most importantly, they have developed some self-regulatory mechanisms to facilitate their attempts to read, solve, and learn from text.
4. *Learner processes and strategies.* Successful learners have a well-balanced repertoire of cognitive and metacognitive strategies and processes they can appropriately employ and evaluate for a specific task from a designated text. Because they realize that the effectiveness of any study strategy depends upon how it is utilized and whether it meets the demands of the specific task, they carefully select and employ strategies to avoid a wholesale utilization of any one technique.

Such an interactive model of independent learning would obviously have a noticeable impact upon the methodology of developmental education. The entire area of student diagnosis would receive a different focus. (Simpson, 1982) Standardized tests and informal reading inventories could not provide the developmental educator the information on how proficiently a learner can assess the demands of an assigned task or text or measure how adeptly a learner can match a study strategy to that task and text. Instead, the developmental educator would need to obtain that necessary data from informal techniques such as interviews, questioning, observations, self-report measures, and diagnostic teaching sessions. These informal data-gathering techniques emphasize the student in a context where a text and task have been assigned.

This interactive model also has significant implications upon the type of study strategy instruction that should take place with students. Unlike the traditional model where a pre-established curriculum is dictated for all students, this model requires the curriculum and subsequent instruction to originate from the student's own tasks and texts. Workbooks, packaged materials, programmed learning packages, and other published materials on "how to study" become less important and are used, if at all, as only resources. After the developmental educator

utilizes some informal diagnostic techniques such as questioning and observation to ascertain how the student is presently studying for a particular learning task, the two of them cooperatively plan the next step, instruction. Thus, it is extremely critical that the developmental educator be comfortable and skilled in the problem-solving process (Simpson, 1983).

The final implication of this interactive model of independent learning deals with a developmental educator's faculty outreach efforts. If the developmental educator is cooperatively working with faculty members who ask for a short presentation to their classes on "how to study," the content of such a presentation can never be "canned." Rather, these class presentations must be based upon the developmental educator's best interpretation of the specific criterion tasks required for the course. For example, when the author was asked to make a presentation to a Humanities class on how to study for exams, she utilized the following preparation steps:

1. Made an appointment with the professor to discuss course requirements and examine sample test items;
2. Visited a lecture class and took notes;
3. Examined the format of the textbook and previewed several chapters; and
4. Organized and listed some specific suggestions and asked the professor to verify if they were credible and practical.

These steps ensured that the presentation really addressed the type of tasks required in the Humanities course and therefore, made the presentation relevant to the students who were required to listen.

Thus, this model of independent learning has far-reaching effects on the procedures a developmental educator should utilize in student diagnosis and instruction and cooperative faculty projects. While the requirements of such a perspective may seem initially overwhelming, the long-term benefits are immense.

Students Cannot Control or Regulate the Strategies

The most common difficulty a student has in learning how to learn is not related to a lack of knowledge or awareness about possible strategies. (Brown et al., 1981, 1982) Rather, the real impediment to independence in learning lies with a student's inability to regulate and control a particular strategy. (Brown et al., 1981, 1982; Tierney, 1982) When there is no self-regulation or control, a student will neither use that strategy on his/her own volition nor transfer that strategy to other tasks.

Why is it that students lack this ability to regulate, monitor, or control a strategy? The extensive research by Brown and her associates (1976, 1979, 1981, 1982) would suggest that many students have been victims of "blind training" in that no one ever explained to them during the instructional process the real significance of the targeted strategy, nor informed them about the *when*, *where*, and *how* in implementing each strategy. Therefore, students blindly utilize an idea that they do not yet understand. They recite the steps of the preview procedure, but do not know when to apply it, how to modify it with the different tasks and texts, or why it is important to their own learning process. While Tierney's (1982) work substantiates Brown's and her colleagues, he called for more "explicitness" during the instructional process: "The teacher's

task is to provide not only the opportunity for students to work independently, but also sufficient guidance, input, and feedback by which to develop self-regulatory abilities to accompany their efforts." (p. 108)

Thus, it would seem that the problem lies not with the student, but with the type of training or instruction they have been provided. The next question that should be posed is this: Can developmental educators provide the type of instruction necessary for a student to be able to skillfully control or regulate a strategy in his/her independent learning tasks? Recent research (Bartlett, 1978; Day, 1980; Gordon, 1980; Palincsar, Note 2) would suggest yes, with considerable thought for the specific instructional procedures. In these four studies the researchers provided training which was explicit and informative through the use of strategy modelling. Modelling is an instructor's shared verbalizations while implementing a learning strategy on a specific task and text. During the monologue, instructions are given on the purposes of the strategy and critical checkpoints are suggested.

In the Palincsar (Note 2) study with seventh grade students who had been identified as poor comprehenders, the students were trained to ask themselves questions that made predictions or tested hypotheses. Using the Request procedure, Palincsar repeatedly modelled for the students the desired question type. At the end of the training these students not only improved their comprehension on the laboratory materials, but they also transferred this strategy of self-questioning to their independent learning in their content area textbooks. Day's (1980) work which trained college students to summarize, Gordon's (1980) work which trained fifth graders to make inferences, and Bartlett's (1978) work which trained ninth graders to identify and utilize text organizational structures found results similar to Palincsar with the modelling and the explicit instructional procedures.

The author has also found the modelling procedure to be effective when teaching college students and training peer tutors who require more refined process skills. An excerpt follows from a lesson given to college students which models one of the steps of the preview procedure.

Teacher Dialogue. In examining the boldface headings, the third step of the preview procedure, I will be looking for an overall structure or map of this chapter on memory. I know these headings will provide me a guide as a map does for a traveller. From reading the chapter introduction, I learned that the chapter is divided into two large topics: information storage and information retrieval. The first boldface heading under the topic of information storage is short-term and long-term memory. Now, what should I ask about this topic? What should I know about short-term and long-term memory by the time I have finished reading these three pages? Good questions can be asked by using words like *why*, *what*, and *how*. So, possible questions could be: What is short-term memory? What is long-term memory? How are they different? Alike? Therefore, I know that there are three things I should know when I finish this section. Maybe I should jot these questions in the textbook's margins.

The increased time required for strategy modelling may necessitate a re-examination of how time is presently spent in developmental education. When considering the time constraints of modelling, developmental educators should remind themselves that most secondary students have not yet developed the ability to control or regulate a strategy. (Tierney, 1982) Therefore, it is entirely reasonable to suspect that many, but not

all, entering college freshmen could profit from instruction that encourages them to understand the why, when, where, and how of each independent learning strategy that they already have a knowledge or awareness of. The recent research which utilized strategy modelling is certainly a place to begin in assisting college students to be more effective independent learners.

Summary

The focus of research has recently crossed paths with developmental education in the mutual interest of how individuals learn how to learn. This type of research which has concentrated on process questions instead of content questions could bring further definition and purpose to developmental education. The author presented three pertinent insights from this research and then offered some implications for developmental educators who teach independent learning strategies. While these insights and implications are only a starting point, they do provide this field a credible direction for future research and improved methodology.

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